

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: **Cheng Chung WANG**

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Appl. No.: **10/647,814**

Examiner: **Freay, Charles**

Conf. No.: **2353**

Art Unit: **3746**

Title: **INFLATABLE PRODUCT HAVING AN ELECTRICAL INFLATOR**

Date: **December 8, 2006**

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P.O. Box 1450
Alexandria, VA 22313-1450

BRIEF ON APPEAL TO THE BOARD

Sir:

Real Party in Interest

The assignee of this application, and thus the real party in interest in this appeal, is Team Worldwide Corporation, 9F., No. 24, Songzhi Rd., Xinyi District, Taipei City 110, Taiwan R.O.C.

Related Appeals and Interferences

- 1) U.S. Serial No. 10/459,690: Appeal Brief submitted on November 3, 2006.
- 2) U.S. Patent No. 6,793,469: United States District Court, District of Columbia, Case No. 1:04 CV 01785, *Intex Recreation Corp. v. Team Worldwide Corporation v. Intex Recreation Corp.*, pending.

Status of Claims

Claims 1-2 and 5-8 are finally rejected. Claims 3-4 are canceled. No other claims are pending.

Claims 1-2 and 5-8 are the subject of this appeal.

Status of Amendments

No Amendments have been filed subsequent to the Final Rejection.

Summary of Claimed Subject MatterClaim 1

Independent claim 1 is directed to an inflatable product. The inflatable product includes an inflatable body and a socket built in the inflatable body. For example, see the Abstract, page 7, line 21 to page 8, line 1 and Fig. 8A, 40 and 46. An electric pump (Fig. 8A, 42), including a pump body and an air outlet (Fig. 8A, 425), is connected to the socket to pump the inflatable body, wherein the pump body is wholly or partially located in the socket. See page 9, lines 3-10, Figs. 8E-8F. Also see, for example, Figs. 6B, 7B and 13A-B. A connector (Fig. 8A, 423) is provided at a predetermined position of the electric pump for connecting an external power to actuate the electric pump. See page 8, lines 10-13.

Claim 2

Independent claim 2 is also directed to an inflatable product. The inflatable product includes an inflatable body and a socket built in the inflatable body. For example, see the Abstract, page 7, line 21 to page 8, line 1 and Fig. 8A, 40 and 46. An electric pump (Fig. 8A, 42), including a pump body and an air outlet (Fig. 8A, 425), is connected to the socket to pump the inflatable body, wherein the pump body is wholly or partially located in the socket. See page 9, lines 3-10, Figs. 8E-8F. Also see, for example, Figs. 6B, 7B and 13A-B.

Grounds of Rejection to be Reviewed on Appeal

Claims 1-2 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,794,289 to Wortman (hereinafter “Wortman”).

Claims 1-2, 5 and 7-8 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,249,319 to Higgs (hereinafter “Higgs”).

Claim 6 is rejected under 35 U.S.C. §103(a) as unpatentable over Higgs in view of U.S. Patent No. 5,279,545 to Infante (hereinafter “Infante”).

Argument1. Rejection of Claims 1-2 under 35 U.S.C. §102(b) over Wortman

The rejection of a claim for anticipation under 35 U.S.C. §102 requires that the prior art reference include every element of the rejected claim. Furthermore, as stated by the Federal Circuit, the prior art reference must disclose each element of the claimed invention “arranged as in the claim.” *Lindermann Maschinenfabrik GMBH v. American Hoist and Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984).

A. Differences between Wortman and the inventions recited in claims 1-2

In both claims 1 and 2, an inflatable product includes (1) an inflatable body, and (2) a socket built in the inflatable body. A pump body of an electric pump is wholly or partially located in the socket.

Although the term “inflatable body” is not expressly defined in the specification, it is clearly used in its ordinary and customary sense, i.e., a body that is substantially airtight and expands when filled with air or other gas. *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). MPEP 2111 *et seq.* The embodiments in the

specification are airbeds, and these are without questions the characteristics of airbeds. This definition is also wholly consistent with and supported by the way in which the term “inflatable” is defined in the *American Heritage Dictionary of the English Language*, 4th Edition, namely, “[d]esigned to be filled with air or gas before use: *an inflatable mattress*.” The term “inflate” is defined as “[t]o fill (something) with air or gas so as to make it swell.”¹ The term “body” is defined as “[a] mass of matter that is distinct from other masses: *a body of water; a celestial body*.” It is also defined as “[t]he main or central part.” A characteristic of an inflatable mattress that swells when filled with air or other gas is that it must be substantially airtight. This definition comports with the use of the term “airbed” throughout the specification. Thus, when given its plain meaning, the claim term “inflatable body” refers to a substantially airtight structure that expands (or swells) when filled with air or other gas. Stated differently, the structure of an “inflatable body” must be substantially airtight and expand when filled with air or other gas.

One advantage of the arrangement recited in claims 1 and 2 is that to the extent that the pump body is located in the socket, the amount of space outside the inflatable body occupied by the pump body is reduced. For example, in the embodiment in which the pump body is *wholly* located in the socket, little if any of the pump is outside the inflatable body. Thus, where the inflatable body is the portion of the product that provides its beneficial use, there is little if any wasted space. There is no need for external structure to house or support the pump. Rather, it is recessed into the inflatable body, and thus out of the way.

Wortman teaches a mattress 30 including a support member 32 and cribs 34, 36 composed of a foam material. See column 6, lines 4-10 of Wortman. The mattress further includes as two of its elements inflatable cushions 44 and 46, which are supported on support member 32 in a framework defined by cribs 34 and 36. See Figs. 2-3 and column 6, lines 24-26 of Wortman. As clearly shown in Figs. 2-3, the framework defined by cribs 34 and 36 includes sizable openings to the ambient into which inflatable

¹ Also see *Random House Webster's Unabridged Dictionary, Second Edition*, inflatable: “capable of being inflated; designed or built to be inflated before use”; inflate: “to cause to expand or distend with air or gas.”

cushions 44 and 46 are received. An electric air pump 59 may be disposed in a recess comprising cut-outs 58, 60 respectively formed in cribs 34, 36, and is connected to inflatable cushions 44 and 46 via air outlet hose 65. See col. 6, lines 54-55, col. 7, lines 8-15 and Fig. 2 of Wortman.

Appellant recognizes that Wortman does in fact disclose an “inflatable body” as recited in the claims. The inflatable bodies disclosed by Wortman are inflatable cushions 44 and 46, which, as described in the patent, are substantially airtight structures that expand when filled with air or other gas. For example:

A mattress wherein at least one fabric strip bridges a foam crib for ***an inflatable cushion*** to provide lateral stability thereto such as when the mattress is tilted for turning a patient over or otherwise. (Abstract)

More particularly, the present invention relates to mattresses in which are contained ***air-pressurized cushions*** in order to provide pressure relief to patients ... (Col. 1, lines 10-13)

Each of the cushions 44 and 46, shown uninflated in FIG. 1, ***is composed of a suitable puncture-resistant vinyl film or other suitable air imperious flexible material*** and is of a type which has a multiplicity of perhaps 150 upper air cushion cells 52 which partially overlap vertically a multiplicity of perhaps 150 lower air cushion cells 54. (Col. 6, lines 33-38)

The lower cushion 44 ***may be inflated to a suitable pressure by means of a manual inflator*** connectable to air inlet, illustrated at 56, for pressure communication with the cushion 44. (Col. 6, lines 44-48)

A suitable electric air pump, illustrated at 59, having an electrical plug 61 is provided ***for automatically maintaining a desired pressure in the upper cushion 46.*** (Col. 6, lines 51-53)

A passage, illustrated schematically at 67 in FIG. 15, is provided internally of the crib structure between the air inlets 56 and 55 for the air cells 44 and 46 **for supplying pressurizing air to the lower air cell 44**. (Col. 6, lines 55-58)

A mattress, which comprises: a) a crib; b) a lower support member secured to the crib; and c) a first inflatable cushion surrounded by the crib and comprising side-by-side **first and second adjustably inflatable bladders** extending substantially along and on opposed sides of a longitudinal axis of the mattress ... (claim 1)

[Emphasis added]

However, contrary to the inventions of claims 1-2, the recess 58, 60 is formed in the cribs 34, 36, not inflatable cushions 44, 46. Electric pump 59 is disposed in the recess, and communicates with inflatable cushions 44, 46 through an air outlet hose 65 that passes through a passage formed through the cribs. See, for example, Fig. 2 of Wortman. In short, the recess 58, 60 that contains the electric pump 59 is in no way “built in” either one of inflatable cushions 44, 46.

This difference is also found in the other embodiments taught by Wortman. For example, in the embodiment shown in Fig. 15, pump 59 is disposed in a notch 63. However, notch 63 is also not “built in” either one of inflatable cushions 44, 46. It is instead formed by a cut-out in a lower corner of the foot portion of the crib support structure 34, 36 in an area adjacent to the inflatable cushions 44 and 46. See Fig. 15 and column 12, lines 61-66 of Wortman.

It is therefore Appellant’s belief that Wortman fails to teach or suggest an inflatable product including an inflatable body and a socket built in the inflatable body, where a pump body of an electric pump is wholly or partially located in the socket, as recited in claims 1-2. Claims 1-2 are therefore believed to be patentable over Wortman.

B. Response to Examiner's argumentsi. Final Office Action dated January 20, 2006

In the Final Office Action dated January 20, 2006, the Examiner rejects claims 1 and 2 as being anticipated by Wortman for the reasons found in the Non-final Office Action dated August 24, 2005. In said office action, the Examiner refers to Fig. 15 of Wortman and respectively identifies mattress 30, notch 63 (formed in crib support structure 34, 36) and pump 59 as the alleged "inflatable body," "socket," and "pump body" of claims 1 and 2. See page 2 of the Non-final Office Action.

Appellant respectfully submits that the entirety of mattress 30 is not an "inflatable body" as recited in the claims. As discussed, mattress 30 includes a framework defined by cribs 34 and 36 including sizable openings to the ambient in which inflatable cushions 44 and 46 are received. See Fig. 15 of Wortman. There is no disclosure that the crib structure is substantially airtight or expands when filled with air (and such would appear not to be the case), nor does Wortman make any attempt to inflate it.

Thus, when the claim term is accorded its plain meaning, mattress 30 taken as a whole (i.e., the aggregate structure defined by at least the combination of cribs 34, 36 and inflatable cushions 44 and 46) is not an "inflatable body." Specifically, because of the openings in cribs 34, 36, mattress 30 is not a substantially airtight structure, and would not expand when filled with air or other gas.

In the Final Office Action, the Examiner further states:

With regards to Wortman et al the applicant argues that because the air cells are the inflatable element then the mattress 30 itself is not inflatable. The examiner disagrees because the air mattress includes as one of its elements the air cells. The applicant admits this in his own arguments. Because part of the air mattress (the cells) are inflatable then the mattress is an inflatable object.

See page 3 of the final office action.

By referring to a single “inflatable object” (a term that is entirely absent from the claims) in the final rejection, the Examiner fails to recognize that claims 1 and 2 recite an “inflatable product” including 1) an “inflatable body” and 2) other elements in addition to the inflatable body, e.g., a socket, an electric pump, a connector, etc. The claims therefore distinguish between the “inflatable product” as a whole and the “inflatable body” element thereof. In other words, the terms “inflatable product” and “inflatable body” do not have an identical meaning and, in the claims of the present invention, do not refer to an identical structure.

Furthermore, by failing to account for the distinction between an inflatable product including an inflatable body and the inflatable body itself, the Examiner essentially takes the position that because a structure includes an inflatable body, it is an inflatable body. This is evident in the statements “[t]he examiner disagrees because the air mattress includes as one of its elements the air cells” and “[b]ecause part of the air mattress (the cells) are inflatable then the mattress is an inflatable object.” This reasoning results in a circular definition for inflatable body (i.e., an inflatable body is a structure including an inflatable body). Such a definition does not comport with the ordinary and customary meaning of the term.

More particularly, the Examiner argues that the whole of mattress 30 is an “inflatable object” because it includes as one of its elements an air cell. Appellant understands this to mean that the Examiner considers mattress 30, and in particular the aggregation of inflatable cushions 44, 46 and cribs 34, 36 to be an “inflatable body” as recited in the claims. Appellant acknowledges that inflatable cushions 44, 46 are inflatable bodies. Furthermore, the express purpose of the crib support structure is to hold the inflatable cushions. See col. 6, lines 24-32 of Wortman. However, the mere aggregation of an inflatable body and a non-inflatable body does not necessarily result in an “inflatable body.” Instead, for the combined structure of mattress 30 to be an inflatable body, it must itself meet the criteria of an inflatable body, i.e., the combined structure taken as a whole must be substantially airtight and expand when filled with air or gas.

ii. Advisory Action dated May 23, 2006

In the Advisory Action dated May 23, 2006, the Examiner states the following:

... The applicant essentially argues that a product or body is not an inflatable product or body unless it is the element which directly contacts the filling gas. It is clear that this is what the applicant is arguing because he states that an inflatable product cannot include a frame or be an element surrounding a body which is inflatable ...

Appellant submits that the Examiner is both mischaracterizing the Appellant's position and once again failing to distinguish the terms "inflatable product" and "inflatable body" as recited in claims 1 and 2. In particular, the Examiner is incorrect to say that it is Appellant's view that "an inflatable product cannot include a frame or be an element surrounding a body which is inflatable." To the contrary, claims 1 and 2 clearly express that the "inflatable product" can and does include non-inflatable bodies in addition to "a body which is inflatable" (the Examiner's own words). However, it is the "body which is inflatable" that corresponds to the "inflatable body" recited in the claims.

In this regard, Appellant notes that the Examiner appears to acknowledge that "a body which is inflatable" refers to, for example, an air cell, as opposed to the "inflatable product" taken as a whole. Is "a body which is inflatable" not an "inflatable body" as recited in the claims?

The Examiner further states:

... The applicant gives the Example of an automobile and states that an automobile is not considered inflatable even though it has an inflatable air bag within it. The Examiner feels that it a poor example. An automobile has a rigid outer body structure and the air bag is not used to expand or puff it up ...

Appellant notes that in Wortman, the cribs are not expanded or puffed up by the inflatable cushions when the inflatable cushions are filled with air. To the contrary, the cribs are an independent framework which could just as well be made of wood or metal. The point of the car airbag analogy is that just because a product includes an inflatable body does not mean the product, as a whole, is an inflatable body. To the contrary, for a product to be an inflatable body, the product as a whole must meet the criteria of an inflatable body.

The Examiner further states:

... The examiner feels a more appropriate example would be a collapsible bag where the bag is of a multilayer construction. Clearly if the bag where [sic] filled or inflated with air one would not say that it is only the inner layer of the bag which has been inflated. It is the examiner's position that the terms "inflatable product" and "inflatable body" define a broad [sic] set of inflatable devices which include elements with or without multiple layers and which can have or do not have to have structural frames or supports within them ...

Appellant agrees that there are some multilayer collapsible bags that meet the criteria of an inflatable body. Others may not. However, Appellant fails to see how Wortman's bed, taken as a whole, can be considered a multilayer collapsible bag. Would the cribs collapse if the inflatable cushions were deflated? No. Can the cribs be fairly construed as a "layer" of the inflatable cushions? No. To the contrary, it is quite clear that Wortman describes an inflatable cushion disposed in a separate and distinct crib support structure. While the inflatable cushion is clearly an inflatable body, the combined structure of the inflatable cushion and the crib support structure is not.

2. Rejection of Claims 1-2, 5, 7 and 8 under 35 U.S.C. §102(b) over HiggsB. Differences between Higgs and in the inventions recited in claims 1-2, 5, 7 and 8

In both claims 1 and 2, an inflatable product includes (1) an inflatable body, and (2) a socket built in the inflatable body. A pump body of an electric pump is wholly or partially located in the socket. Claims 5, 7 and 8 depend from claim 2 and therefore include all of the limitations of claim 2.

Higgs discloses mattress 3 including flat sheets of foam material cemented together to define hollow compartment 22 therein. An inflatable air chamber 28 and blower housing 24 are adjacently disposed in hollow compartment 22. Higgs further discloses that “[a]xially aligned windows 6 and 8 are cut through the liner 2 and a side rail 14 of mattress 3 to allow the health care worker or care giver to access a control panel 48 that is located on the blower housing 24.” See column 2, lines 46-55 and Fig. 3 of Higgs. In other words, hollow 22 is open-ended.

As with Wortman, Appellant recognizes that Higgs does in fact disclose an “inflatable body” as recited in the claims. The inflatable body disclosed by Higgs is inflatable air chamber 28, which, as described in the patent, is a substantially airtight structure that expands when filled with air or other gas. For example:

The system includes a foam mattress having a hollow interior in which to receive an ***inflatable air plenum*** and a blower housing. (Abstract)

At one end of the hollow compartment is ***an inflatable air plenum formed by a series of air chambers that are filled with air*** to provide a controlled support for the individual. (Col. 1, lines 55-58)

In this regard, FIG. 4 of the drawing shows the blower housing 24 and air chamber 28 ***with an air tube 30 extending therebetween so that the normally***

uninflated air plenum 28 may be filled with air in a manner to be disclosed when referring to FIG. 7. (Col. 3, lines 36-40)

Thus, contrary to the inventions of claims 1-2, the blower housing 24 in hollow compartment 22 is adjacent to, not built into, the inflatable air chamber 28. See, for example, Fig. 4 of Higgs. Just the opposite, inflatable air chamber 28 is disposed inside a different portion of hollow compartment 22.

It is therefore Appellant's belief that Higgs fails to teach or suggest an inflatable product including an inflatable body and a socket built in the inflatable body, where a pump body of an electric pump is wholly or partially located in the socket, as recited in claims 1 and 2. Claims 1-2, 5, 7 and 8 are therefore believed to be patentable over Higgs.

B. Response to Examiner's arguments

i. Final Office Action dated January 20, 2006

In the Final Office Action dated January 20, 2006, the Examiner rejects claims 1 and 2 as being anticipated by Higgs for the reasons found in the Non-final Office Action dated August 24, 2005. In said office action, the Examiner respectively identifies mattress 3, hollow compartment 22 and blower housing 24 as the alleged "inflatable body," "socket," and "pump body" of claims 1 and 2. See page 2 of the Non-final Office Action.

Appellant submits that mattress 3 is not an "inflatable body" as recited the claims. In particular, Higgs teaches that windows 6 and 8 are cut through the liner 2 and a side rail 14 of mattress 3 to allow access a control panel 48 located on the blower housing 24. In other words, the assembly of flat sheets of foam material of mattress 3 includes windows 6 and 8 communicating the hollow compartment 22 with the ambient. Indeed, ambient air is apparently drawn by blower 50 through windows 6 and 8, and then through baffles 58 before being delivered to the inflatable air chamber 28 through the flexible air tube 30. (See Fig. 7.) There is no disclosure that any portion of the mattress 3 encompassing blower housing 24 is substantially airtight, and Higgs does not make any

attempt to inflate it. Air simply passes through this portion en route to the inflatable air chamber 28.

Thus, when the claim term is accorded its plain meaning, mattress 3 as a whole is not an “inflatable body.” Specifically, because of windows 6 and 8 and blower housing 24, the portion of mattress 3 defining hollow compartment 22 is not a substantially airtight structure, and would not expand when filled with air or other gas.

In the Final Office Action, the Examiner further states:

With regard to Higgs the applicant’s argument that the sheet of foam material is not an inflatable body is not convincing. In Higgs it is the whole structure of the mattress 3, which the sheet of foam material along with the rest of the structure forms, that defines the void into which air is pumped to inflate the mattress 3. Because the void is defined by the structure of the mattress 3 the mattress 3 is an inflatable object.

By referring to a single “inflatable object” (a term that entirely absent from the claims) in the final rejection, the Examiner once again fails to recognize that claims 1 and 2 recite an “inflatable product” including 1) an “inflatable body” and 2) other elements in addition to the inflatable body, e.g., a socket, an electric pump, a connector, etc. The claims therefore distinguish between the “inflatable product” as a whole and the “inflatable body” element thereof. In other words, the terms “inflatable product” and “inflatable body” do not have an identical meaning and, in the claims of the present invention, do not refer to an identical structure.

The Examiner argues that the whole structure of the mattress 3 defines a void into which air is pumped to inflate the mattress 3, and therefore the mattress 3 is an “inflatable object.” Appellant understands this to mean that the Examiner considers mattress 3, and in particular the aggregation of inflatable air chamber 28 and the foam sheets defining hollow compartment 22, to be an “inflatable body” as recited in the claims. Appellant acknowledges that the inflatable air chamber 28 of Higgs is an “inflatable

body.” However, Appellant submits the mere aggregation of an inflatable body and a non-inflatable body does not necessarily result in an “inflatable body.” To the contrary, for the combined structure to be an inflatable body, it must itself meet the criteria of an inflatable body, i.e., the combined structure taken as a whole must be substantially airtight and expand when filled with air or other gas.

Furthermore, the “void” into which air is pumped in Higgs is clearly defined by the inflatable air chamber, not the whole of mattress 3. For example, as noted above, Higgs discloses “[a]t one end of the hollow compartment is an inflatable air chamber formed by a series of air chambers that are filled with air to provide a controlled support for the individual.” See col. 1, lines 55-58 of Higgs. The hollow compartment 22, and in particular the portion containing blower housing 24, cannot itself be “filled with air to provide a controlled support” because it is open to the ambient. Thus, an air tube 30 is provided to communicate the blower received in housing 24 and the inflatable air chamber 28.

ii. Advisory Action dated May 23, 2006

The Examiner’s comments in the Advisory Action and the Appellant’s responses can be found above in section 1.B.ii.

Appellant adds that Higgs mattress 3 is analogous to a pump and an inflatable body being placed in an open-ended sleeve. Inflation of the inflatable body may cause some portion of the sleeve to move or rise. Nevertheless, the aggregate structure of the inflatable body and sack could not fairly be termed an “inflatable body” because it would not be substantially airtight. In other word, the aggregate structure would contain an inflatable body, but it would not be an inflatable body.

3. Rejection of claim 6 under 35 U.S.C. §103(a) over Higgs in view of Infante.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580

(CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). MPEP 2143.03.

In the rejections, the Examiner relies on Higgs to teach all of the limitations of claim 6 except for a waterproof switch. Infante is instead relied upon to teach this feature.

For the same reasons advanced in connection with claims 1 and 2, it is Appellant's belief that Higgs fails to teach or suggest an inflatable product including an inflatable body and a socket built in the inflatable body, where a pump body of an electric pump is wholly or partially located in the socket, as recited in claims 1-2. Appellant further submits that Infante fails to teach or suggest this feature. Claim 6 is therefore believed to be patentable over Higgs in view of Infante.

Conclusion

For the extensive reasons advanced above, Appellant respectfully but forcefully contends that claims 1, 2 and 5-8 are patentable over the cited references. Reversal of all rejections is courteously solicited.

Respectfully submitted,

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CLAIMS APPENDIX

1. An inflatable product including:

an inflatable body;

a socket built in the inflatable body;

an electric pump, including a pump body and an air outlet, connected to the socket to pump the inflatable body, wherein the pump body is wholly or partially located in the socket; and

a connector provided at a predetermined position of the electric pump for connecting an external power to actuate the electric pump.

2. An inflatable product including:

an inflatable body;

a socket built in the inflatable body; and

an electric pump, including a pump body and an air outlet, connected to the socket to pump the inflatable body, wherein the pump body is wholly or partially located in the socket.

5. An inflatable product as claimed in claim 2, further including a switch connected to the electric pump to actuate the electric pump.

6. An inflatable product as claimed in claim 5, further including a waterproof layer covering the switch to protect the switch from water.

7. An inflatable product as claimed in claim 1, wherein the air outlet is connected to the inflatable body via the socket.

8. An inflatable product as claimed in claim 2, wherein the air outlet is connected to the inflatable body via the socket.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.